

(19)日本国特許庁 (JP)

## (12) 公開特許公報 (A)

(11)特許出願公開番号

特開平8-108911

(43)公開日 平成8年(1996)4月30日

(51) Int.Cl.<sup>6</sup>  
 B 6 5 G 1/137  
 G 0 6 F 19/00  
 G 0 6 K 7/00

識別記号 庁内整理番号  
 A 8819-3F  
 U 7623-5B

F I

技術表示箇所

G 0 6 F 15/ 24

審査請求 未請求 請求項の数1 O L (全 6 頁)

(21)出願番号 特願平6-246610

(22)出願日 平成6年(1994)10月12日

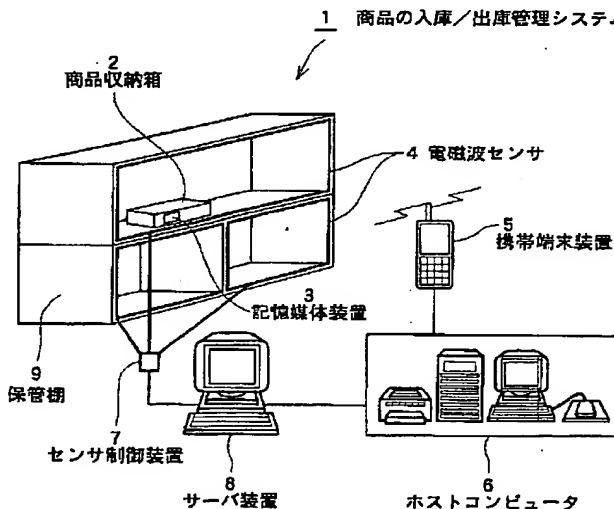
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(54)【発明の名称】商品の入庫／出庫管理方法

(57)【要約】

【目的】効率が良く、信頼性の高い商品の入庫／出庫管理方法を提供する。

【構成】商品収納箱2、商品収納箱2に装着された記憶媒体装置3、保管棚9に配置した電磁波センサ4、管理データ(商品データ、保管位置情報)を読み込んで無線で送信する携帯端末装置5、在庫商品の管理データを保存するホストコンピュータ6、センサ制御装置7、サーバ装置8を備えた商品の入庫／出庫管理システム1に適用し、出庫に際して商品収納箱2の保管位置を光と音で表示する商品の入庫／出庫管理方法。



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## 【特許請求の範囲】

【請求項1】 在庫対象となる全ての商品に関する商品データを保存、管理するホストコンピュータと、商品収納箱に装着され、収納された商品に対応した商品データを記憶する記憶媒体装置と、商品収納箱の保管場所に複数個配置され、商品収納箱の入庫および出庫を検出するとともに、センサの配置されている保管位置情報を発生する電磁波センサと、前記ホストコンピュータに保存された商品データの中から入庫および出庫対象となる商品の商品データを読み込み、記憶媒体装置へ転送する持ち運び可能な携帯端末装置とを備え、前記商品収納箱が前記電磁波センサを通過する際に前記記憶媒体装置からの商品データに基づいて入庫を管理するとともに、前記携帯端末装置から転送される商品データに基づいて出庫を管理する商品の入庫／出庫管理方法において、商品の入庫および出庫管理を以下のステップに従って実行することを特徴とする商品の入庫／出庫管理方法。

第1ステップ：入庫対象となる商品の商品データをホストコンピュータに登録する。

第2ステップ：第1ステップの商品データを商品収納箱に装着した記憶媒体装置に転送し、記憶する。

第3ステップ：入庫の際、第2ステップの記憶媒体装置が電磁波センサを通過すると、電磁波センサから保管位置情報を記憶媒体装置に送り記憶させるとともに、記憶媒体装置の商品データを電磁波センサが検出し、商品データに保管位置情報を加えてホストコンピュータに送り、保存する。

第4ステップ：出庫指示があると、携帯端末装置はホストコンピュータに保存されている出庫対象となる商品の商品データと保管位置情報を読み込む。

第5ステップ：第4ステップの携帯端末装置を商品保管場所に持込み、出庫対象となる商品の商品データと保管位置情報を無線で送信し、記憶媒体装置は受信した商品データおよび保管位置情報と、入庫時に記憶した商品データおよび保管位置情報を比較し、比較結果に基づいて光と音を発生して保管場所を表示する。

第6ステップ：第5ステップの記憶媒体装置が電磁波センサを通過する際（出庫）、記憶媒体装置の商品データを更新して保管位置情報を消去するとともに、電磁波センサが検出した記憶媒体装置の更新商品データと保管位置消去情報をホストコンピュータに送り、保存する。

## 【発明の詳細な説明】

## 【0001】

【産業上の利用分野】この発明は商品の入庫および出庫を管理する商品の入庫／出庫管理方法に関する。

## 【0002】

【従来の技術】従来の商品の入庫／出庫管理方法において、数多くの商品データをコンピュータに記憶させ、出荷要求に対応して該当する商品を保管場所から取り出し、取り出した結果をコンピュータに再登録させるよう

にしたものは知られている。

【0003】また、バーコードを商品に印刷したり、バーコードラベルを商品に貼り付けて商品の入庫および出庫管理を効率的に処理するような商品の入庫／出庫管理方法も知られている。

【0004】さらに、バーコードを利用したPOSシステム（販売時点管理方式）のように、商品の入庫および出庫状況を管理するとともに商品の売れ筋情報に基づいて商品の品揃を行うよう構築された方法も知られている。

## 【0005】

【発明が解決しようとする課題】従来の商品の入庫／出庫管理方法は、POSシステムのように売れ筋商品とそうでない商品の区分、売れ筋商品の品揃や数量予測が可能となり効率的な商品管理ができるが、倉庫等の広い場所に商品を保管し、出庫要求に応じて商品を取り出すような商品の入れ作業は、保管場所を熟知した経験者に頼らざるを得ない状況にある。

【0006】このように、商品の入庫と出庫には、入庫した商品の保管場所を対象となる商品と関連付けて記憶しておき、出庫時には記憶を頼りにして商品を出庫するため商品検索に多くの時間を要する課題がある。

【0007】また、商品と保管場所を予め設定しておき、該当する商品を入庫したり出庫する方法もあるが、入庫する商品の数量が予測より多くて保管場所に収容できなかったり、反対に、商品の数量が予測より少なすぎて保管場所に無駄なスペースを生じる課題がある。

【0008】さらに、季節により保管する商品の種類や数量の変更、返品等の突発的な状況等に対してフレキシビリティな対応ができない課題がある。

【0009】この発明はこのような課題を解決するためなされたもので、第1の目的は入庫と出庫の担当者が異なり、かつ担当者が商品保管場所に充分な知識が無くても、商品の入庫や出庫が効率的にできる商品の入庫／出庫管理方法を提供することにある。

【0010】また、第2の目的は、商品の保管場所を指定せず、限られたスペースを有効に利用し、自由度のある商品の入庫管理ができる商品の入庫／出庫管理方法を提供することにある。

## 【0011】

【課題を解決するための手段】前記課題を解決するためこの発明に係る商品の入庫／出庫管理方法は、入庫対象となる商品の商品データをホストコンピュータに登録する第1のステップと、第1ステップの商品データを商品収納箱に装着した記憶媒体装置に転送し、記憶する第2ステップと、入庫の際、第2ステップの記憶媒体装置が電磁波センサを通過すると、電磁波センサから保管位置情報を記憶媒体装置に送り記憶させるとともに、記憶媒体装置の商品データを電磁波センサが検出し、商品データに保管位置情報を加えてホストコンピュータに送り、

保存する第3ステップと、出庫指示があると、携帯端末装置はホストコンピュータに保存されている出庫対象となる商品の商品データと保管位置情報を読み込む第4ステップと、第4ステップの携帯端末装置を商品保管場所に持込み、出庫対象となる商品の商品データと保管位置情報を無線で送信し、記憶媒体装置は受信した商品データおよび保管位置情報と、入庫時に記憶した商品データおよび保管位置情報を比較し、比較結果に基づいて光と音を発生して保管場所を表示する第5ステップと、第5ステップの記憶媒体装置が電磁波センサを通過する際

(出庫)、記憶媒体装置の商品データを更新して保管位置情報を消去するとともに、電磁波センサが検出した記憶媒体装置の更新商品データと保管位置消去情報をホストコンピュータに送り、保存する第6ステップに従い、商品の入庫および出庫管理を行うことを特徴とする。

#### 【0012】

【作用】この発明に係る商品の入庫／出庫管理方法は、入庫の際、記憶媒体装置が電磁波センサを通過すると、電磁波センサから保管位置情報を記憶媒体装置に送り記憶させるとともに、記憶媒体装置の商品データを電磁波センサが検出し、商品データに保管位置情報を加えてホストコンピュータに送り、保存するので、該当する商品を任意の保管場所に保管しても、入庫した商品とその保管場所を商品データと保管位置情報から知ることができる。

【0013】また、この発明に係る商品の入庫／出庫管理方法は、携帯端末装置を商品保管場所に持込み、出庫対象となる商品の商品データと保管位置情報を無線で送信し、記憶媒体装置は受信した商品データおよび保管位置情報と、入庫時に記憶した商品データおよび保管位置情報を比較し、比較結果に基づいて光と音を発生して保管場所を表示するので、該当する商品の所在を知ることができる。

【0014】さらに、記憶媒体装置が電磁波センサを通過する際(出庫)、記憶媒体装置の商品データを更新して保管位置情報を消去するとともに、電磁波センサが検出した記憶媒体装置の更新商品データと保管位置消去情報をホストコンピュータに送り、保存するので、出庫後の商品の在庫管理ができる。

#### 【0015】

【実施例】以下、この発明の実施例を添付図面に基づいて説明する。図1はこの発明に係る商品の入庫／出庫管理方法を適用した商品の入庫／出庫管理システム構成図である。図1において、商品の入庫／出庫管理システム1は、入庫／出庫管理の対象となる商品を収納する商品収納箱2、商品収納箱2に装着された、例えばラベルまたはカード形状の記憶媒体装置3、商品を保管する保管棚9に複数個配置した電磁波センサ4、ホストコンピュータ6に保存された管理データ(商品データ、保管位置情報)を読み込んで無線で送信する携帯端末装置5、在

庫商品の管理データを保存するホストコンピュータ6、電磁波センサ4が検出した商品データ、および電磁波センサ4が送出する保管位置情報を収集してサーバ装置8に提供するセンサ制御装置7、センサ制御装置7からの管理データ(商品データ、保管位置情報)収集、出荷データの設定や各種命令を行い、ホストコンピュータ6に各種情報を提供するサーバ装置8を備える。

【0016】図2に記憶媒体装置の一実施例構成図を示す。記憶媒体装置3は小型のカードまたはラベル形状で構成し、内部にマイクロ部品で構成したバッテリ11、ランプ12、スピーカ13、送受信機14、記憶媒体15、アンテナ16を備え、携帯端末装置5から送信されてくる商品データや電磁波センサ4から送信されてくる保管位置情報をアンテナ16を介して送受信機14で受信し、入庫情報として記憶媒体15に記憶する。

【0017】また、記憶媒体装置3は携帯端末装置5から無線で送られてくる出庫情報の管理データ(商品データ、保管位置情報)をアンテナ16を介して送受信機14で受信し、記憶媒体15に記憶している入庫情報(商品データ、保管位置情報)と比較し、出庫情報が入庫情報と一致したり、所定の条件を(保管位置や商品の種類、色彩、数量等)満たす場合には、ランプ12やスピーカ13を駆動して光や音を発生し、保管場所を表示するよう構成する。

【0018】さらに、記憶媒体装置3は電磁波センサ4が配置された場所を通過する際、記憶媒体15に記憶されている商品データの一部、例えば商品コード、入庫日付等のデータを送受信機14を介してアンテナ16から送信するよう構成する。

【0019】電磁波センサ4は保管棚9に任意に配置し、保管位置情報を乗せた電磁波を発生して入庫または出庫の際に、商品収納箱2に装着された記憶媒体装置3が電磁波内を通過することにより、保管位置情報を記憶媒体装置3に送るとともに、記憶媒体装置3からの商品データの一部(商品コード、入庫日付等のデータ)を検出し、センサ制御装置7およびサーバ装置8を介して商品データの一部および保管位置情報をホストコンピュータ6に送る。なお、図1では保管場所を限定された保管棚9としたが、保管場所に電磁波センサ4を配置し、かつ天井等の複数の位置に電磁波増幅器を配置することにより倉庫等の広い場所にも対応することができる。

【0020】センサ制御装置7は複数の電磁波センサ4から送られてくる商品データの一部や保管位置情報の受信タイミング、入庫または出庫の区別等の制御を行い、サーバ装置8に情報を提供する。サーバ装置8は、センサ制御装置7の駆動を制御して商品データの一部および保管位置情報をホストコンピュータ6に送ったり、入庫や出庫に関する各種設定および命令を行う。

【0021】ホストコンピュータ6は、商品データおよび保管位置情報を保存し、この情報に基づいて在庫期間

の設定や管理、入庫および出庫の履歴、商品の品切れの予測および補充等の管理を行う。

【0022】携帯端末装置5は無線送信機を備えたデータ入出力装置で構成し、ホストコンピュータ6から商品データを読み込み、入庫情報として記憶媒体装置3に送信したり、出庫指示のある商品データおよび保管位置情報をホストコンピュータ6から読み込んだ後、商品保管場所に持ち運んで出庫すべき商品の商品データおよび保管位置情報を無線で送信する。

【0023】次に、この発明を適用した商品の入庫／出庫管理システムの動作について説明する。図3はこの発明に係る商品の入庫／出庫管理方法を適用した商品の入庫／出庫管理システムの動作フロー図である。状態S1では、まず管理方法の第1ステップとして入庫対象となる商品の商品データをサーバ装置8を操作してホストコンピュータ6に登録し、続いて第2ステップとして携帯端末装置5から入庫する商品データを送信し、商品データを商品収納箱2に装着した記憶媒体装置3に転送し、記憶する。

【0024】状態S2から状態S4が管理方法の第3ステップに対応し、状態S2で保管棚9に商品を保管するために商品収納箱2が電磁波センサ4を通過すると、商品収納箱2に装着された記憶媒体装置3は、電磁波センサ4が送信する保管位置情報を受信して記憶し、商品収納箱2が保管棚9に保管（状態S3の入庫）される。一方、状態S4では、電磁波センサ4は記憶媒体装置3が記憶している商品データを検出し、この商品データに電磁波センサ4の保管位置情報を付加してホストコンピュータ6に送り、ホストコンピュータ6は入庫した商品収納箱2の保管位置情報を対応する商品データとともに記憶する。（入庫完了）

【0025】この状態から出庫指示があると、状態S5（管理方法の第4ステップに対応）で、携帯端末装置5はホストコンピュータ6から出庫指示のあった商品データおよび保管位置情報を読み込んで記憶する。

【0026】状態S6から状態S7が管理方法の第5ステップに対応し、状態S6では、出庫指示のあった商品データおよび保管位置情報を記憶した携帯端末装置5を商品保管場所に持込み、商品データおよび保管位置情報を無線で送信する。続いて状態S7に移行し、記憶媒体装置3は商品データおよび保管位置情報を受信した後、入庫時に記憶媒体装置3に記憶された商品データおよび保管位置情報と比較し、出庫情報が入庫情報に一致する場合、または出庫情報が入庫情報の所定の条件を満たす場合には図2に示す記憶媒体装置3のランプ12およびスピーカ14を駆動して商品収納箱2の保管位置を表示する。

【0027】状態S8で出荷指示のあった商品収納箱2を保管棚9から取り出す際（出庫）、状態S9（管理方法の第6ステップに対応）に移行し、記憶媒体装置3が

電磁波センサ4を通過すると、記憶媒体装置3は入庫時の商品データと出庫指示の商品データに基づいて（例えば、数量の偏差を演算）商品データを更新し、保管位置情報を消去する。また、電磁波センサ4が検出した記憶媒体装置3からの更新した商品データと、電磁波センサ4が発生する保管位置消去情報をホストコンピュータ6に送り保存する。以後の入庫および出庫は、動作状態S9から状態S2に移行して一連のフローを繰返す。

【0028】

【発明の効果】以上説明したようにこの発明に係る商品の入庫／出庫管理方法は、入庫の際、記憶媒体装置が電磁波センサを通過すると、電磁波センサから保管位置情報を記憶媒体装置に送り記憶させるとともに、記憶媒体装置の商品データを電磁波センサが検出し、商品データに保管位置情報を加えてホストコンピュータに送って保存し、該当する商品を任意の保管場所に保管しても、入庫した商品とその保管場所を商品データと保管位置情報から知ることができるので、保管場所が限られていても自由に保管場所を選択することができる。

【0029】また、この発明に係る商品の入庫／出庫管理方法は、携帯端末装置を商品保管場所に持込み、出庫対象となる商品の商品データと保管位置情報を無線で送信し、記憶媒体装置は受信した商品データおよび保管位置情報を比較し、比較結果に基づいて光と音を発生して保管場所を表示することにより、該当する商品の所在を知ることができるので、誰でも容易に出庫処理することができる。

【0030】さらに、この発明に係る商品の入庫／出庫管理方法は、記憶媒体装置が電磁波センサを通過する際（出庫）、記憶媒体装置の商品データを更新して保管位置情報を消去するとともに、電磁波センサが検出した記憶媒体装置の更新商品データと保管位置消去情報をホストコンピュータに送って保存するので、煩わしい作業等を必要とせずに出庫後の商品の在庫管理ができる。

【0031】よって、効率が良く、信頼性の高い商品の入庫／出庫管理方法を提供することができる。

【図面の簡単な説明】

【図1】この発明に係る商品の入庫／出庫管理方法を適用した商品の入庫／出庫管理システム構成図

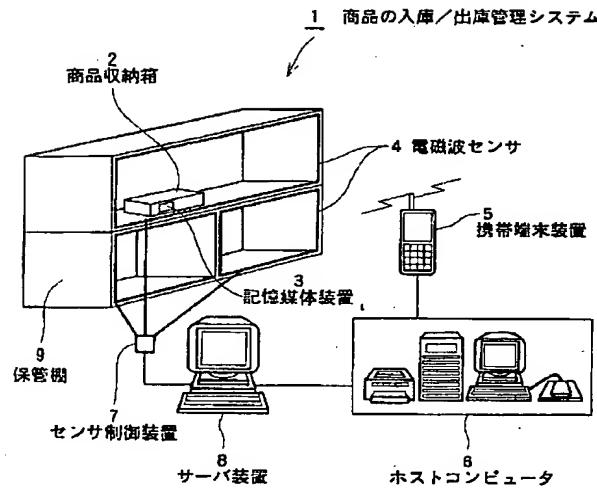
【図2】記憶媒体装置の一実施例構成図

【図3】この発明に係る商品の入庫／出庫管理方法を適用した商品の入庫／出庫管理システムの動作フロー図

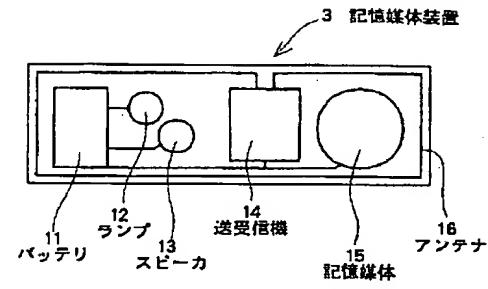
【符号の説明】

1…商品の入庫／出庫管理システム、2…商品収納箱、3…記憶媒体装置、4…電磁波センサ、5…携帯端末装置、6…ホストコンピュータ、7…センサ制御装置、8…サーバ装置、9…保管棚、11…バッテリ、12…ランプ、13…スピーカ、14…送受信機、15…記憶媒体、16…アンテナ。

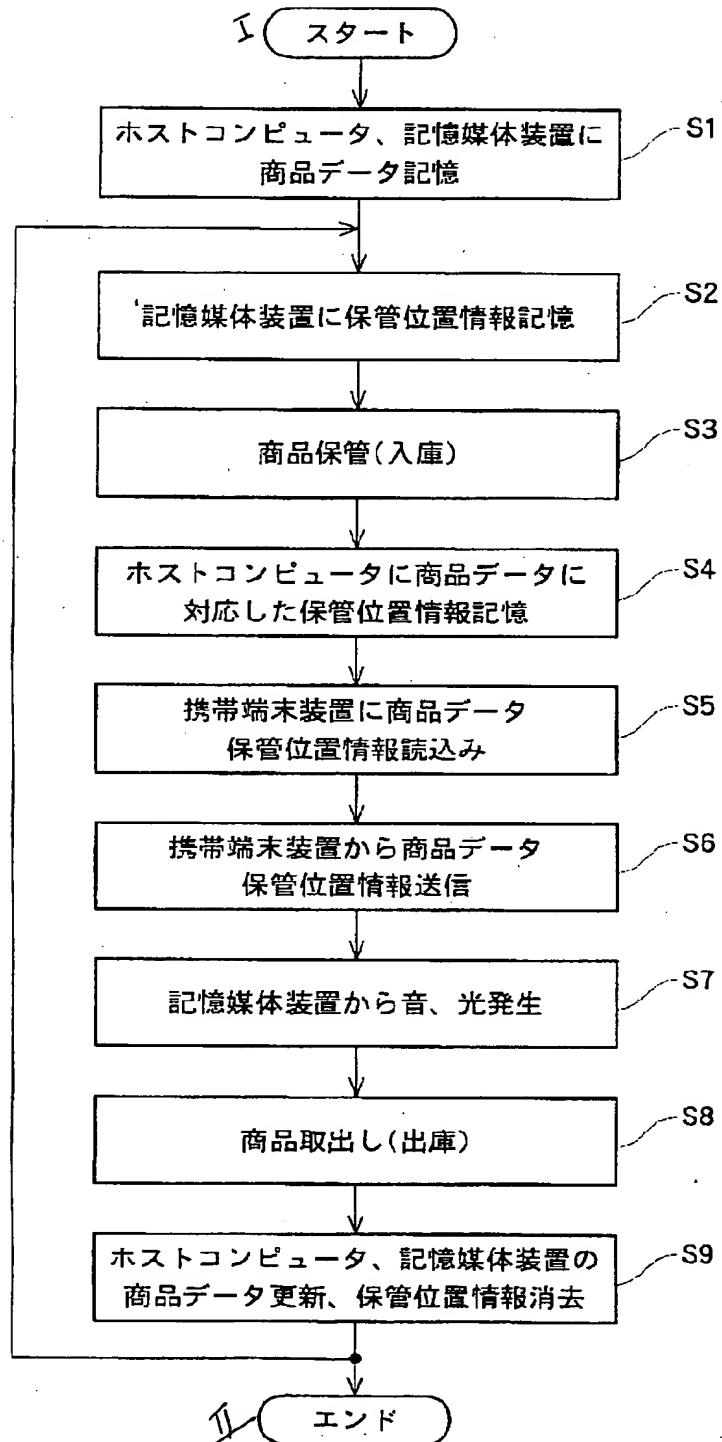
【図1】



【図2】



【図3】



(3)

(11) Patent Kokai [laid-open] Publication No.: Hei 8[1996]-108911

(12) KOKAI PATENT PUBLICATION (A)

(19) JAPANESE PATENT OFFICE (JP)

(21) Patent Application No.: Hei 6[1994]-246610

(22) Patent Application Date: October 12, 1994

(43) Patent Kokai Publication Date: April 30, 1996

|                            |          |                              |              |
|----------------------------|----------|------------------------------|--------------|
| (51) Int. Cl. <sup>6</sup> | ID Codes | Sequence Nos. for Office Use | FI           |
| B 65 G 1/137               | A        | 8819-3F                      |              |
| G 06 F 19/00               |          |                              |              |
| G 06 K 7/00                | U        | 7623-5G                      |              |
|                            |          |                              | G 06 F 15/24 |

No. Of Claims: 1 OL (Total 6 pages [in Japanese original])

Examination Request: Not Requested

(54)[TITLE OF THE INVENTION]

MANAGEMENT METHOD OF WAREHOUSING/DELIVERY OF COMMERCIAL  
PRODUCTS [Shoohin no nyuuko/shukko Kanri hoho]

(57) [ABSTRACT]

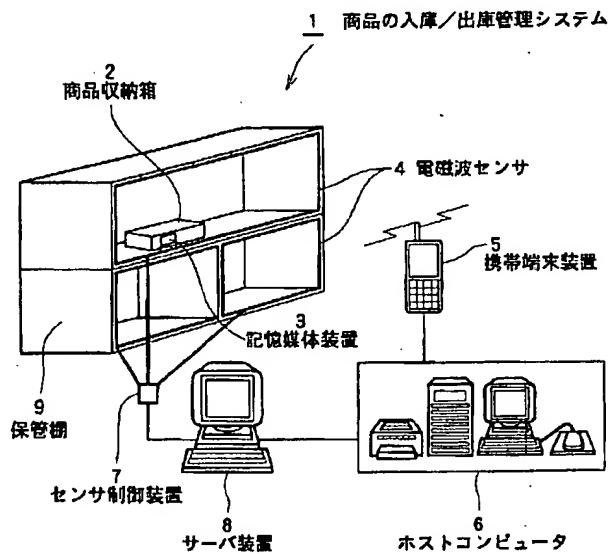
[PURPOSE]

To offer a management method of warehousing/delivery of commercial products with good efficiency and high reliability.

[CONSTITUTION]

It applies to the management system of warehousing/delivery of commercial products 1 that is equipped with a commercial products container box 2, a memory medium device 3 that is attached to the commercial products container box 2, electromagnetic wave sensor[s] 4 that is arranged on a storage shelf 9, a portable terminal device 5 that reads and wireless transmits management data (commercial products data, information on storage shelf location) , a host computer 6 that stores management data of inventory commercial products, a sensor control device 7, and a server device 8; and it refers to the management method of warehousing/delivery of commercial products that displays storage location of the commercial products container box 2 with lights and sound during the time of delivery.

1: warehousing/delivery management system of commercial products, 2: commercial products container box, 3: memory medium device, 4: electromagnetic wave sensor, 5: portable terminal device, 6: host computer, 7: sensor control device, 8: server device, 9: storage shelf



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[Amendments: There are no amendments to this patent.]

[Note: All names, addresses, company names, and brand names are translated in the most common manner. Japanese language does not have singular or plural words unless otherwise specified with numeral prefix or general form of plurality suffix. Translator's note]

[CLAIMS]

[CLAIM ITEM 1]

According to a warehousing/delivery management method of commercial products that is equipped with a host computer that stores and manages data on commercial products relating to all commercial products which are subjected for inventory, a memory medium device that is attached to a commercial products container box, and memorizes commercial products data corresponding to the contained commercial products, electromagnetic wave sensor[s] which are arranged in plural numbers at storage location of the commercial products container boxes to not only detect warehousing and delivery of commercial products container boxes but also, generate storage position information where sensors are arranged, a portable terminal device that is portable and reads commercial products data of the commercial products subjected for warehousing and delivery among commercial products data stored in said host computer and transfers to the memory medium device; and when said commercial products container box passes through said electromagnetic wave sensors, it manages warehousing based on the commercial products data from said memory medium device, and at the same time, manages delivery based on commercial products data transferred from said portable terminal device, the warehousing/delivery management method of commercial products is characterized by the fact that implements warehousing and delivery management of the commercial products in accordance with steps described below.

FIRST STEP: To register commercial products data of commercial products subjected for warehousing on the host computer.

SECOND STEP: To transfer and memorize commercial products data of the first step on the memory medium device that is attached to the commercial products container box.

THIRD STEP: When memory medium device of the second step passes through electromagnetic wave sensors during warehousing, to send storage location information to the memory medium device to be memorized from the electromagnetic wave sensors, and at the same time, to allow electromagnetic wave sensors to detect commercial products data of memory medium device, and to add storage location information to the commercial products data to send to the host computer to be stored.

FOURTH STEP: When delivery is instructed, the portable terminal device reads commercial product data and storage location information subjected for said delivery and is stored in the host computer.

FIFTH STEP: Portable terminal device of the fourth step is brought to the commercial products storage location to wireless transmit commercial product data of the commercial product subjected for delivery and storage location information; and memory medium device compares thus commercial products data and storage location information it received against commercial product data and storage location information which were memorized at the time of warehousing to generate lights and sound based on results of said comparison to display storage location.

SIXTH STEP: When memory medium device of the fifth step passes through electromagnetic wave sensors (delivery), it updates commercial product data on the memory medium device and erases storage location information, and at the same time, sends updated commercial products data of memory medium device and storage location erasure information detected by the electromagnetic wave sensors to the host computer to be stored.

[DETAILED EXPLANATION OF THE INVENTION]

[0001]

[FIELDS OF INDUSTRIAL APPLICATION]

This invention relates to warehousing/delivery management method of commercial products, which manages warehousing, and delivery of commercial products.

[0002]

[PRIOR ART]

According to conventional management method of warehousing/delivery of commercial products, the one that is designed so the computer to memorize numerous volumes of commercial products data and take out applicable commercial products in accordance with delivery request from the storage location, and re-registers that result on the computer has been known.

[0003]

In addition, a method to manage warehousing/delivery of commercial products by printing bar codes on commercial products, or to paste bar code labels on the commercial products to process warehousing and delivery management of commercial products efficiently has been also known.

[0004]

Furthermore, as in the case of POS system (point of sale management system) that utilizes bar codes. A method to manage status of warehousing and delivery of commercial products, and at the same time carries out assortment of the commercial products in accordance with sales information of the commercial products has been also known.

[0005]

[SUBJECTS SOLVED BY THIS INVENTION]

According to conventional management method of warehousing/delivery of commercial products, although as in the case of POS system, it makes it possible to conduct an efficient management of the commercial products through classification of commercial products which are selling well and not well, assortment of good selling commercial products or forecast of sales volume and the like, the situation is that it must rely on the experienced people with thorough knowledge when it comes to warehousing and delivery work of the commercial products to store commercial products in a large facility such as warehouse and to take out commercial products in accordance with delivery request.

[0006]

As explained above, warehousing and delivery of the commercial products present subjects of requiring much time for search and retrieval of commercial products because storage location of warehoused commercial products is memorized in connection with the subjected commercial products, and delivery of the commercial products is made by simply relying on that memory at the time of delivery.

[0007]

In addition, although a method to pre-establish commercial products and storage locations beforehand can be also mentioned, it leaves a subject that volume of to-be warehoused commercial products may sometime happens to be greater than forecast, and cannot be contained at designated storage location, or on a contrary, volume may sometime happens to be too few from the forecast causing waste of space for such storage.

[0008]

Furthermore, a subject remains on not possible accommodation toward flexibilities against storage of seasonal types of commercial products, or sudden changes including changes in volume or returned goods.

[0009]

This invention was completed to solve such subjects; and its first purpose is to offer a management method of warehousing/delivery of commercial products that allows efficient warehousing and delivery of the commercial products even by persons who are responsible for warehousing and delivery may vary, or persons with insufficient knowledge of storage location of commercial products.

[0010]

In addition, the second purpose is to offer a management method of warehousing/delivery of the commercial products that allows warehousing management of commercial products that does not designate storage location of the commercial products and utilizes limited space with good efficiency and degree of freedom.

[0011]

[MEASURES USED TO SOLVE THE SUBJECTS]

The management method of warehousing/delivery of commercial products that relates to this invention solves above-explained subjects through warehousing and delivery management of the commercial products characterized to include following steps: the FIRST STEP that registers commercial products data of commercial products subjected for warehousing on a host computer; and the SECOND STEP that transfers and memorizes commercial products data of the first step on a memory medium device that is attached to a commercial product container box; and the THIRD STEP that when memory medium device of the second step passes through electromagnetic wave sensors during warehousing, storage location information is sent from the electromagnetic wave sensors to the memory medium device to be memorized, and at the same time, commercial products data on the memory medium device is detected by the electromagnetic wave sensors and adds storage location information to said commercial products data and send this to the host computer to be stored; and the FOURTH STEP that allows portable terminal device to read commercial product data subjected to delivery and storage location information which are stored in the host computer in the case of delivery instruction ; and the FIFTH STEP that brings in portable terminal device of the fourth step to the commercial products storage location, and wireless transmits commercial product data and storage location information subjected to delivery, and allows memory medium device to compare thus received commercial products data and storage location information against commercial products data and storage location information which were memorized at the time of warehousing to generate lights and sound based on the results of such comparison to display the storage location; and the SIXTH STEP that when memory medium device of the fifth step passes through electromagnetic wave sensors (delivery), it updates commercial products data of the memory medium device, and erases storage location information, and at the same time, sends thus updated commercial products data of memory medium device detected by the electromagnetic wave sensors and erased storage location information to the host computer to be stored.

[0012]

[ACTIONS]

According to the management of warehousing/delivery of commercial products of this invention, when memory medium device passes through electromagnetic wave sensors during the time of warehousing, storage position information is sent to the memory medium device to be memorized from the electromagnetic wave sensors, and at the same time, electromagnetic wave sensors are made to detect commercial products data of the memory medium device to add storage location information to the commercial products data to send to the host computer to be stored; and therefore, even when applicable commercial products are stored at any optional locations, it is possible to know the warehoused commercial products and their storage location through commercial products data and storage location information.

[0013]

In addition, according to this invention's management method of warehousing/delivery of commercial products, because portable terminal device is brought into the commercial products storage location to wireless transmit commercial products data and storage location information of the commercial products subjected to delivery, and memory medium device compares thus received commercial products data and storage location information against commercial products data and storage location information memorized at the time of warehousing to generate lights and sound based on the results of comparison to display storage location; and therefore, it is possible to know the location of applicable commercial products.

[0014]

Furthermore, when memory medium device passes through electromagnetic wave sensors (delivery), commercial products data in the memory medium device is updated, and storage location information is erased, and at the same time, electromagnetic wave sensors send updated commercial products data and storage position erasure information of the memory medium device to the hot computer to be stored; and therefore, it is possible to conduct inventory management of the commercial products after delivery.

[0015]

[EXAMPLES]

Examples of this invention are explained in reference with attached Figures. Figure 1 illustrates a system constitution of management of warehousing/delivery of commercial products to which this invention's management method of warehousing/delivery of commercial products is applied. According to the Figure 1, the warehousing/delivery management system of commercial products 1 is equipped with commercial products container box 2 that contains commercial products subjected to warehousing/delivery, memory medium device 3 of, for instance, either label form or card form that is attached to the commercial products container box 2, plural numbers of electromagnetic wave sensors 4 which are arranged on the storage shelf 9 that stored commercial products, portable terminal device 5 that reads management data (commercial products data, storage location information) which are stored in the host computer 6 and wireless transmit these, host computer 6 that stores management data of inventory commercial products, sensor control device 7 that collects commercial products data detected by the electromagnetic wave sensors 4 and storage location information detected by the electromagnetic wave sensors 4 to the server device 8, and server device 8 that issues various commands such as collection of management data (commercial products data, storage location information) from the sensor control device 7, setting of delivery data and the like and offers various information to the host computer 6.

[0016]

Figure 2 illustrates constitution of one example of memory medium device. The memory medium device 3 is constituted of either small card or label shape, and it encloses battery 11, lamp 12, speaker 13, transmitter and receiver 14, memory medium 15, antenna 16 which are constructed of micro-size parts, and it receives commercial product data that is transmitted from the portable terminal device 5, or storage location information transmitted from the electromagnetic wave sensors 4 at the transmitter and receiver 14 via antenna 16, and memorizes on the memory medium 15 as warehousing information.

[0017]

In addition, the memory medium device 3 should be constructed in such manner that it receives management data (commercial products data, storage location information) of delivery information sent wireless from the portable terminal device 5 at the transmitter and receiver 14 through antenna 16, and compared with warehousing information (commercial products data, storage location information) memorized in the memory medium 15; and when delivery information happens to match with those of warehousing information, or meet prescribed conditions (storage location or types, color, volume of commercial products, and the like), it drives lamp 12 or speaker 13 to generate lights and sound to display storage location.

[0018]

Furthermore, the memory medium device 3 should be constructed in such manner that when it passes through the location where electromagnetic wave sensors 4 are arranged, part of commercial data memorized in the memory medium device 15, for instance, commercial product code, data of warehousing and the like, is transmitted from antenna 16 through transmitter and receiver 14.

[0019]

Regarding electromagnetic wave sensors 4, they may be arranged on the storage shelf 9 in optional manner, and during warehousing or delivery, they are to generate electromagnetic wave bearing storage location information, and when memory medium device 3 that is attached to the commercial products container box 2 passes through electromagnetic wave, they are to send storage location information to the memory medium device 3, and at the same time, they detect part of commercial products data (commercial product code, data on warehousing date and the like) from the memory medium device 3 to send part of commercial products data and storage location information to the host computer 6 through sensor control device 7 and server device 8. Furthermore, although Figure 1 illustrates storage shelf 9 that limits storage location, it is possible to arrange electromagnetic wave sensors 4 at storage location as well as plural numbers of electromagnetic wave amplifiers on the ceiling and the like to accommodate toward wide area such as warehouse and the like.

[0020]

The sensor control device 7 controls timing of receiving part of commercial products data or storage location information send from the electromagnetic wave sensor 4, or provides distinction of warehousing and delivery and offers information to the server device 8. The server device 8 controls drive of sensor control device 7 to either send part of commercial products data and storage location information to the host computer 6 or provides various settings and commands relating to the warehousing and delivery.

[0021]

The host computer 6 works to store commercial products data and storage location information, and sets or manages inventory period based on this information, manages history of warehousing and delivery as well as forecast out of stock of the commercial products and replenishment.

[0022]

The portable terminal device 5 comprises data input/output device equipped with a wireless transmitter; and it reads commercial products data from the host computer 6, or sends this as warehousing information to the memory medium device 3, or after reading commercial products data and storage location information subjected to delivery from the host computer 6, it is carried into commercial products storage location to wireless transmit commercial products data of the to-be delivered commercial products and storage location information.

[0023]

Then, operation of management system of warehousing/delivery of commercial products that applies this invention is explained below. Figure 3 illustrates an operation flow diagram of management system of warehousing/deliver of commercial products that uses this invention's management method of warehousing/delivery of the commercial products. At status S1, commercial products data of the commercial products subjected to warehousing is registered on the host computer 6 by operating server device 8 as the first step, and then, as second step, to-be warehoused commercial products data is transmitted from the portable terminal device 5 to transmit commercial products data to the memory medium device 3 that is attached to the commercial products container box to be memorized.

[0024]

Status S2 through status S4 equate to the third step of the management method, and when commercial products container box 2 passes through electromagnetic wave sensors 4 in order to store the commercial products on the storage shelf 9 at the status S2, the memory medium device 3 that is attached to the commercial products container box 2 receives and memorizes storage location information transmitted from the electromagnetic wave sensors 4, and commercial products container box 2 is stored (warehousing at the status S3) on the storage shelf 9. On the one hand, at the status S4, electromagnetic wave sensors 4 detect commercial products data memorized by the memory medium device, and adds storage position information of electromagnetic wave sensors 4 to said commercial products data to send to the host computer 6; and the host computer 6 memorizes storage location information of the warehoused commercial products container box 2 along with corresponding commercial products data. (Warehousing is completed)

[0025]

When delivery is designated in this status, portable terminal device 5 reads and memorizes commercial products data and storage location information of delivery designation from the host computer 6 at the status S5 (corresponds to the fourth step of the management method).

[0026]

Status S6 to status S7 corresponds with the fifth step of the management method; and at status S6, portable terminal device 5 with memory of commercial products data designated for delivery and storage location information are brought into the commercial product storage location to wireless transmit commercial products data and storage location information. Then, after moving onto the status S7, the memory medium device 3 receives commercial products data and storage location information, and then, it compares with the commercial data and storage location memorized at the time of warehousing on the memory medium device 3; and when delivery information happens to corresponds with that of warehousing information, or when delivery information satisfies prescribed conditions of warehousing information, lamp 12 and speaker 14 of the memory medium device 3 illustrated in the Figure 2 are driven to display storage location of the commercial products container box 2.

[0027]

When commercial products container box 2 that was designated for delivery at the status S8 is taken out of the storage shelf 9 (delivery), it moves onto the status S9 (corresponds to the sixth step of the management method), and when memory medium device 3 passes through electromagnetic wave sensors 4, the memory medium device 3 updates commercial products data at the time of warehousing and commercial products data based on the commercial products data (for instance, deviation of quantity is computed) of delivery designation to erase the storage location information. In addition, updated commercial products data from the memory medium device 3 detected by the electromagnetic wave sensors 4 and storage location erasure information generated by the electromagnetic wave sensors 4 are sent to the host computer 6 to be stored. Warehousing and delivery hereafter moves from the operation status S9 to status S2 to repeat series of flow.

[0028]

[EFFECTS OF THIS INVENTION]

As explained above, because management method of warehousing/delivery of commercial products that relates to this invention sends storage location information from the electromagnetic wave sensors to memory medium device to be memorized when memory medium device passes through electromagnetic wave sensors, and at the same time, commercial products data of the memory medium device is detected by the electromagnetic wave sensors to add storage location information to the commercial products data to send to the host computer to be stored, and even when applicable commercial products are stored at optional storage location, it is possible to know warehoused commercial products and their storage location from the commercial products data and storage location information, it is possible to select the storage location freely even when storage location is limited.

[0029]

In addition, according to the management method of warehousing/delivery of commercial products that relates to this invention, portable terminal device is brought into to where commercial products are stored to wireless transmit commercial products data subjected to the delivery and storage location information, and memory medium device compares thus received commercial products data and storage location information memorized at the time of warehousing, and generates lights and sound based on the results of said comparison to display the storage location ; and as it is possible to find out the location of applicable commercial products, anybody can implement delivery processing easily.

[0030]

Furthermore, according to the management method of warehousing/delivery of commercial products that relates to this invention, memory medium device updates commercial products data and erases storage location information when said memory medium device passes through electromagnetic wave sensors, and at the same time, electromagnetic wave sensors detects updated commercial products data of memory medium device and storage location erasure information and sends them to the host computer; and therefore, there is not need for cumbersome works to enable inventory management of commercial products after delivery.

[0031]

And therefore, it is possible to offer the management method of warehousing/delivery of commercial products that shows good efficiency and high reliability.

[BRIEF DESCRIPTION OF THE FIGURES]

[FIGURE 1]

It illustrates a system diagram of warehousing/delivery management system of commercial products that uses this invention's management method of warehousing/delivery of commercial products.

[FIGURE 2]

It illustrates a constitution of one example of memory medium device.

[FIGURE 3]

It illustrates an operation flow diagram of warehousing/delivery management system of commercial products that uses this invention's management method of warehousing/delivery of commercial products.

[DESCRIPTION OF CODES]

1: warehousing/delivery management system of commercial products, 2: commercial products container box, 3: memory medium device, 4: electromagnetic wave sensor, 5: portable terminal device, 6: host computer, 7: sensor control device, 8: server device, 9: storage shelf, 11: battery, 12: lamp, 13: speaker, 14: transmitter/receiver, 15: memory medium, 16: antenna

Figures 1 and 2

1: warehousing/delivery management system of commercial products, 2: commercial products container box, 3: memory medium device, 4: electromagnetic wave sensor, 5: portable terminal device, 6: host computer, 7: sensor control device, 8: server device, 9: storage shelf, 11: battery, 12: lamp, 13: speaker, 14: transmitter/receiver, 15: memory medium, 16: antenna

図 1 【図 1】

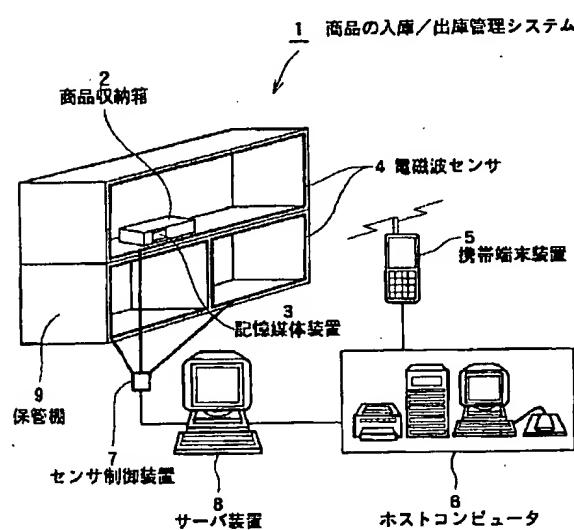
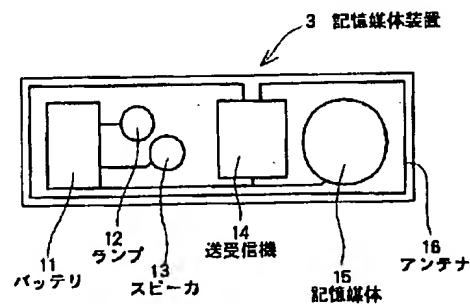


図 2 【図 2】



【図3】 FIG. 3

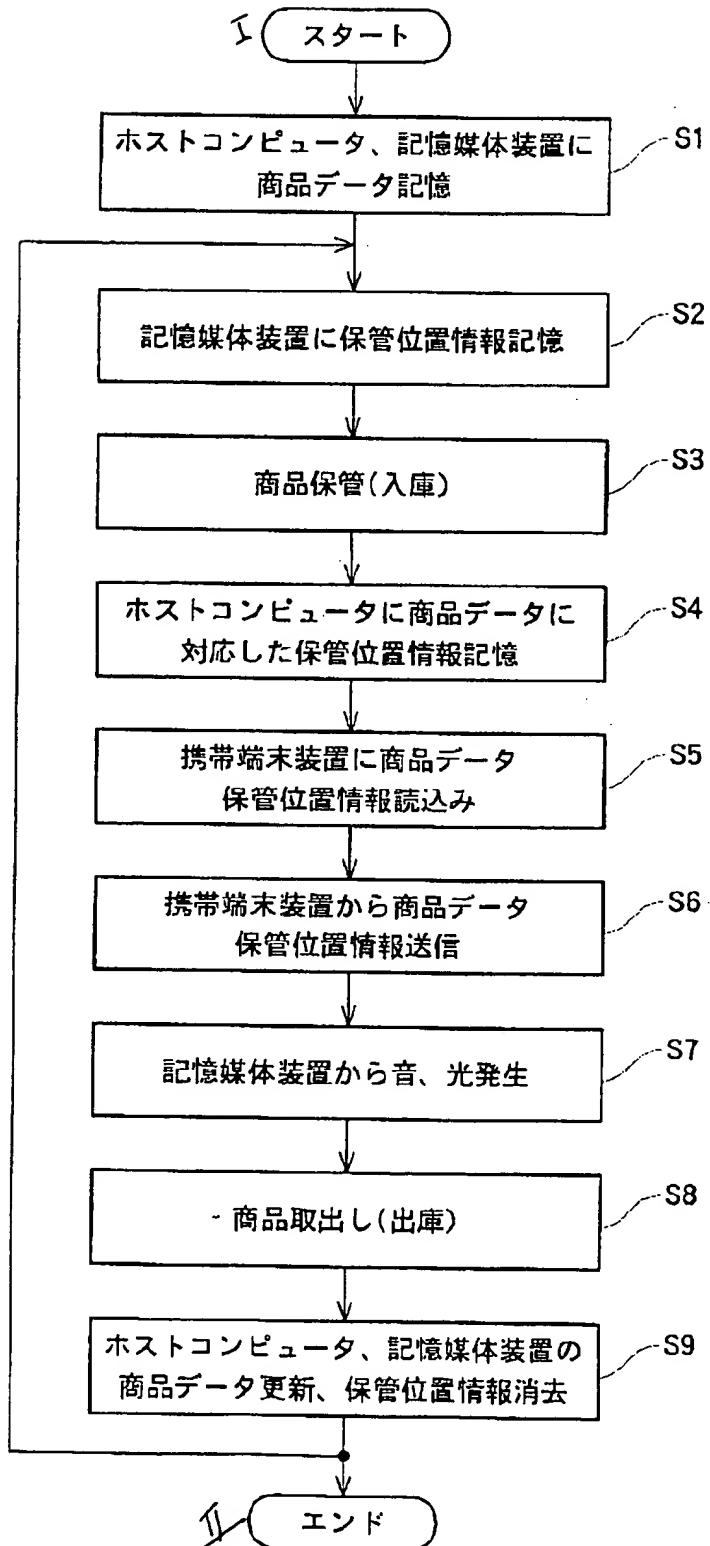


Figure 3

I: start, II: end

- S1: memorize commercial products data on host computer and memory medium device
- S2: Memorize storage location information on the memory medium device
- S3: commercial products storage (warehousing)
- S4: memorize storage location information corresponding with commercial products data on the host computer,
- S5: Read commercial products data and storage location information on the portable terminal device
- S6: transmit commercial products data and storage location information from the portable terminal device
- S7: generate sound and lights from the memory medium device
- S8: take out commercial products (delivery)
- S9: update commercial products data and erasure of storage location information on the host computer and memory medium device

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